

Spizaetus ornatus vicarius subsp. nov.

Type: Carnegie Museum number 24881, adult female, collected by Morton E. Peck, in the pine ridge country near Manatol Lagoon, British Honduras, July 5, 1905.

Subspecific characters: Adult similar to that of the nominate race, but with the sides of the face, neck, and throat duller, snuff brown to mikado brown (instead of cinnamon rufous to hazel as in typical *ornatus*); the abdomen more heavily streaked with black transverse spots; and with the black malar stripe from the angle of the bill, separating the brown cheeks and auriculars from the white chin and mid-throat, generally, but not invariably, broader: young similar to that of the nominate race, but with the crown generally more heavily washed with tawny cinnamon and with numerous, small, dark fuscous streaks (crown almost or entirely without dark fuscous streaks in young of the typical form).

Range: As indicated above—southern Mexico, Guatemala, Honduras, British Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Ecuador. I have seen no Peruvian specimens and cannot say whether or not birds from that country are of this form. The species has been recorded from Chyavetas, Peru. I should expect from the fact that the Ecuadorian bird seen (from Paramba in northern Ecuador) is *vicarius* and that Bolivian examples seen (from Rio Surutu and Rio Yapacani) are *ornatus*, northern Peruvian birds would be closer to *vicarius* and southern and especially southwestern ones to *ornatus*.

I have seen no birds from Trinidad and assume that they are *ornatus* like those from Venezuela. However, the only Tobago bird seen, a young one, is as similar to *vicarius* as to *ornatus*. It may be, however, that the juvenal plumage characters of the two races are not valid, in which case there would be no reason for considering this bird *vicarius*.

Material examined: *S. o. ornatus*: 8 specimens from British Guiana, Brazil, Venezuela, Paraguay, Bolivia, and one from Tobago that may be *vicarius*.

S. o. vicarius: 25 specimens from Mexico, Guatemala, Honduras, British Honduras, Nicaragua, Costa Rica, Panama, Colombia, and Ecuador.

I am greatly indebted to Mr. Peters, Dr. Stone, Mr. Todd, Mr. Boulton, Mr. van Rossem, and Mr. Wheeler for the loan of material used in this study.

ZOOLOGY.—*Chinese spiders of the family Lycosidae*.¹ IRVING FOX.
(Communicated by PAUL BARTSCH.)

Through the kindness of the United States National Museum I was granted the opportunity of studying a collection of spiders made by D. C. Graham in Szechwan Province, China, during the years 1923 to 1930. I wish to express my appreciation to the authorities of the Museum for their helpfulness while this study was in progress, and especially to E. A. Chapin, curator of the Division of Insects. All the species described or discussed in this paper are in the collection of the United States National Museum.

¹ Received June 27, 1935.

Arctosa gertschi, n. sp.

Male: Total length, 10.8 mm. Carapace, 6.23 mm. long, 4.05 mm. wide. Carapace dark brown in the alcoholic specimen, with indications of a lighter median band. Sides brown, with marginal lines of white hairs. Sternum, labium, endites, and coxae black. Legs reddish brown without annulations. The shrivelled abdomen is black.

First row of eyes narrower than the second (33/37), slightly procurved, the medians larger, closer to each other than to the laterals. Eyes of the second row their diameter apart. Third row wider than the second (45/37), and much narrower than the carapace at that point. Quadrangle of posterior eyes wider than long (45/34). Clypeus equal in height to five-sixths the diameter of the anterior median eyes. Chelicerae with two teeth on the lower margin, and three on the upper. Legs stout, the tibiae with 2-2-2-spines below, the last pair apical, the posterior tibiae with basal and submedian spines above. Tibia and patella I, 6.23 mm. long. Tibia and patella IV, 7.02 mm. long. Male palpal organ as figured.

TYPE LOCALITY.—China: male holotype from Chaotung, Yunnan Province, 1925. Type: U. S. N. M. Cat. No. 1137.

Although this spider differs markedly from the generality of the species of *Arctosa* in the spinal armature of the anterior and posterior tibiae, the structure of the palpal organ is characteristic of that genus resembling in certain respects that of the male palpus of *Arctosa cinerea* (Fab.), the genotype.

Lycosa wulsini, n. sp.

Female: Total length, 17.50 mm. Carapace, 9.30 mm. long, 7.13 mm. wide. Abdomen, 8.22 mm. long, 6.14 mm. wide. Carapace brown, with a median longitudinal light band which is wider than the posterior row of eyes anteriorly, but which narrows abruptly before the dorsal groove, and continues backward as a line about one-third the width of the anterior portion. Sides of the carapace dark brown with distinct broad, whitish, submarginal lateral stripes limited by narrower brown bands below them. Marginal lines of white hairs at the edges of the sides. Sternum, labium and endites black. Legs brown shaded with black; coxae black with lighter portions at the bases, femora with indistinct longitudinal black lines above. Abdomen brown above; at the base a solid black mark extending a little more than half the length of the abdomen. At the posterior portion of this mark, and below it are scattered numerous black dots. Venter of the abdomen with a solid black spot which would include the entire venter were it not outlined on all sides by an orange band.

First row of eyes narrower than the second row (40/43), slightly procurved, median eyes larger than the lateral, and closer to the lateral than to each other. Eyes of the second row further apart than the diameter of one of them (17/13). Posterior row of eyes broader than the second row (57/43), much narrower than the width of the carapace at that point. Quadrangle of posterior eyes broader than long (57/45). Clypeus higher than the diameter of the anterior median eyes (9/7). Chelicerae armed with three teeth on the lower margin. Legs moderately stout, tibiae with 2-2-2 spines below, the last pair apical, the posterior tibiae with basal and submedian spines above. Tibia and patella I, 5.15 mm. long. Tibia and patella IV, 8.71 mm. long. Epigynum as figured.

TYPE LOCALITY.—China: female holotype from Shanghai, collected by the National Geographic Society Expedition under F. R. Wulsin, August, 1922. Type: U. S. N. M. Cat. No. 1138.

Lycosa chapini, n. sp.

Female: Total length, 14.35 mm. Carapace, 7.12 mm. long, 5.74 mm. wide. Abdomen, 7.22 mm. long, 5.05 mm. wide. Carapace brown, anteriorly with a light reddish brown design consisting of a thin median line extending from the posterior lateral eyes to the dorsal groove, and a short but wide transverse bar crossing this, giving off at its ends two thin lines which meet forming a point with the median line. Sides of the carapace brown with submarginal light bands having irregular edges and frequent interruptions. Clypeus reddish brown with dark discolorations below the lateral eyes. Chelicerae densely covered with long hairs. Sternum, labium, and endites brown with lighter edges. Sternum with a lighter central area. Dorsum of the abdomen reminiscent of *Pardosa* having a black mottled ground on which are four pairs of indistinct light spots with black centers. Venter pale or reddish. Legs brown, femora with four rings, rest of the joints indistinctly annulate.

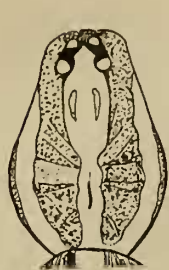
First row of eyes narrower than the second (31/37), slightly procurved, medians larger, somewhat closer to the laterals than to each other. Eyes of the second row their diameter apart. Third row of eyes wider than the second (55/36). Clypeus high, about one and one-half the diameter of the anterior median eyes. Chelicerae armed with three teeth on the lower margins. Legs tapering from the proximal to the distal ends, tibiae with 2-2-2 spines below, the last pair apical. Tibia and patella I, 8.12 mm. long. Tibia and patella IV, 9.21 mm. long. Epigynum as figured.

TYPE LOCALITY.—China: female holotype from Kunghsien south of Suifu, Szechwan Province, April 3, 1930; three female paratypes from Tatsientu, Szechwan Province, July 20, 1923. Type and paratypes: U. S. N. M. Cat. No. 1139.

Lycosa chengta, n. sp.

Female: Total length 11.00 mm. Carapace, 4.55 mm. long, 3.66 mm. wide. Abdomen, 6.43 mm. long, 2.57 mm. wide. Carapace brown, medially with a light central orange band as wide as the third row of eyes. A short tongue-like projection from this band goes forward between the eyes of the third row to a point midway between this row and the second eye row. At the dorsal groove the band has irregular edges; posteriorly it tapers to a narrow stripe. Sides of the carapace brown, the margins black with wide submarginal light bands. Sternum and labium dark brown, endites and coxae lighter. Legs light brown; femora with annulations. Dorsum of the abdomen brown, medially with several pairs of light brown spots with black centers arranged in series. Venter the same color as the dorsum.

First row of eyes narrower than the second (21/29), straight, the medians larger and closer to the laterals than to each other. Eyes of the second row their diameter apart. Third row of eyes wider than the second (36/29), and much narrower than the carapace at that point. Quadrangle of posterior eyes broader than long (36/26). Clypeus one and one-half times as high as the diameter of the anterior median eyes. Chelicerae with three teeth on the lower margin. Legs slender, the tibiae armed with 2-2-2 spines below, the last pair apical, the posterior tibiae with basal and submedian spines above.



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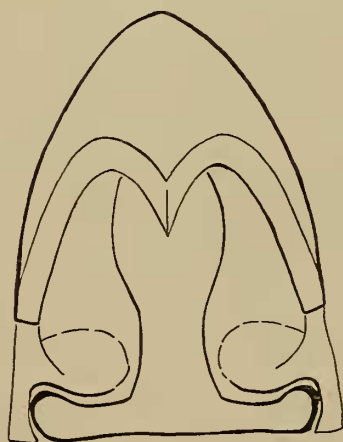
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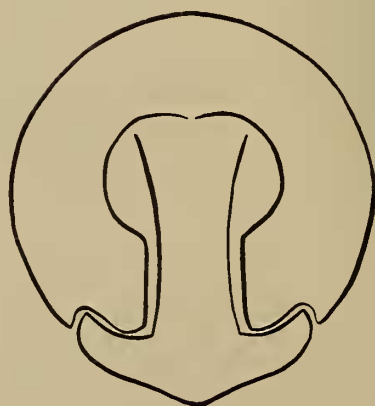
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Fig. 1.—*Lycosa subcoelestis*, n. sp., carapace. Fig. 2.—*Arctosa gertschi*, n. sp., male palpus, ventral view. Fig. 3.—*Lycosa grahami*, n. sp., epigynum. Fig. 4.—*Lycosa wulsini*, n. sp., epigynum. Fig. 5.—*Lycosa chengta*, n. sp., epigynum. Fig. 6.—*Lycosa chapini*, n. sp., epigynum.

Tibia and patella I, 5.24 mm. long. Tibia and patella IV, 6.03 mm. long. Epigynum as figured.

TYPE LOCALITY.—China: female holotype and three female paratypes from Chengtu, Szechwan Province, 1200 feet, April 1, 1930. Type: U. S. N. M. Cat. No. 1140.

Lycosa coelestis L. Koch

Lycosa coelestis L. Koch Verh. Zool-Bot. Gesell. Wien 27: 772, pl. XVI, figs. 35, 36. 1877.

RECORDS.—China: Szechwan Province, Suifu, 1000 feet, May, 1924, 3 females and 2 males; June, 1925, one female; May, 1930, one female.

Lycosa grahami, n. sp.

Female: Total length, 14.35 mm. Carapace 7.62 mm. long, 5.94 mm. wide. Carapace reddish brown in the alcoholic specimen, showing signs of a lighter median longitudinal band. Sides of the carapace edged with black. Sternum, labium, endites, and coxae blackish brown. Legs reddish brown with longitudinal black stripes at the lateral faces. Abdomen (shrivelled in the specimen) black.

First row of eyes narrower than the second (30/34), slightly procurved, the eyes subequal with the medians closer to the laterals than to each other. Second row narrower than the third (34/49), the eyes more than their diameter apart. Quadrangle of posterior eyes wider than long (49/36). Clypeus much higher than the diameter of the anterior median eyes (9/5). Chelicerae with three teeth on the lower margins. Legs moderately stout, tibiae with 2-2-2 spines below, the last pair apical. Tibia and patella I, 7.33 mm. long. Tibia and patella IV, 7.92 mm. long. Epigynum as figured.

TYPE LOCALITY.—China: female holotype from Chaotung, Yunnan Province, 1925. Type: U. S. N. M. Cat. No. 1141.

Lycosa pseudoannulata (Bosenberg and Strand)

Tarentula pseudoannulata Bosenberg and Strand Abh. Senckenb. Naturf. Gesell. 30: 319, pl. 8, fig. 106; pl. 13, figs. 323, 326, 334, 338. 1906.

RECORDS.—China; Szechwan Province, Suifu, 1000 feet, many females, males, and immatures taken November 25, 1929, October 15, 1930, and June, 1930; Kuanshien, 2000 feet, March 2, 1930, females; Kunghsien, 1200 feet, April 3, 1930, males and females; Chengtu, 1200 feet, April 1, 1930, females; Yunnan Border, 6000 feet, October, 1928 males, females, and immatures.

Lycosa subcoelestis, n. sp.

Female: Total length 10.89 mm. Carapace 5.64 mm. long, 4.45 mm. wide. Abdomen 5.05 mm. long, 4.15 mm. wide. Carapace brown with a median longitudinal light brown band which begins at a point midway between the second row of eyes and the third row. This band widens as it progresses backwards, half-way down the cephalothorax it is as wide as the third eye row, here it abruptly narrows to a thin line one-third the width of the anterior portion which widens slightly at the dorsal groove, but narrows again after leaving it. Sides of the carapace brown, the margins dark, with submarginal light bands. Sternum and endites light brown, the labium darker, coxae and the other joints of the legs clear light brown. Abdomen orange at the sides, medially with a narrow light brown, basal band extending almost one-half the total length of the abdomen; at its caudal end this

band bears two light spots on each side. Posterior portion of the abdomen with numerous yellow spots scattered in the dark field. Venter orange.

First row of eyes as wide as the second, straight, the medians larger, and closer to the laterals than to each other. Eyes of the second row their diameter apart. Third row of eyes broader than the second (35/26), and much narrower than the carapace at that point. Quadrangle of posterior eyes wider than long (35/28). Clypeus equal in height to the diameter of the anterior median eyes. Chelicerae with three teeth on the lower margin and strong indication of a fourth one. Legs moderately stout, the tibiae with 2-2-2 spines below, the posterior tibiae with basal and submedian spines above. Tibia and patella I, 4.55 mm. long. Tibia and patella IV, 5.14 mm. long. Epigynum: Similar to that of *Lycosa coelestis* L. Koch.

TYPE LOCALITY.—China; female holotype from Suifu, Szechwan Province; 3 female paratypes from Yachow District, Szechwan Province, 1800 feet, May 1928; 2 female paratypes from the Yunnan Border, 6000 feet; 2 female paratypes from Shin Kai Sei, Mt. Omei, 4400 feet. Type: U. S. N. M. Cat. No. 1142.

This species closely resembles *Lycosa coelestis* L. Koch, but is distinguishable from it by the different designs on the cephalothorax and abdomen (fig. 1), by the light sternum and venter, and by the smaller size. Paratypes from the above localities were smaller than the type by as many as 3 mm. The total length of the females of *L. subcoelestis* varies from 8.5 to 11.5 mm., while that of *L. coelestis* L. Koch ranges from 12 to 15 mm.

Pardosa astrigera L. Koch

Pardosa astrigera L. Koch Verh. Zool-Bot. Gesell. Wien 27: 775, pl. 16, figs. 37, 38. 1877.

RECORDS.—China: Szechwan Province, Suifu, 1000 feet, May 1928, 3 females; Yachow District, 1800 feet, May, 1928, female.

Pardosa laura Karsch

Pardosa laura Karsch Verh. Ver. Rheinl. 36: 102, pl. 1, fig. 21. 1879.

RECORDS.—China: Szechwan Province, Suifu, 1000 feet, June 1925, female; May, 1928, 3 females; Shin Kai Sei, Mt. Omei, 4000 feet, August 7, 1929, female; Yachow District, 1800 feet, May, 1928, female; West of Yachow, 2000 feet, June, 1923, male.

Mature females have distinct annulations on the legs, which is in accordance with Karsch's original description. The annulations of the legs of males, however, are indistinct and sometimes obsolete.

Pirata clercki (Bosenberg and Strand)

Tarentula (Piratica) clercki Bosenberg and Strand Abh. Senckenb. Naturf. Gesell. 30: 316, pl. 8, fig. 107; pl. 13, fig. 320. 1906.

RECORDS.—China: Szechwan Province, Suifu, 1200 feet, April 1, 1930, 2 females; Kunghsien, 1200 feet, April 3, 1930, five females; Chungking, 6000 feet, September 20, 1930, 2 females.